

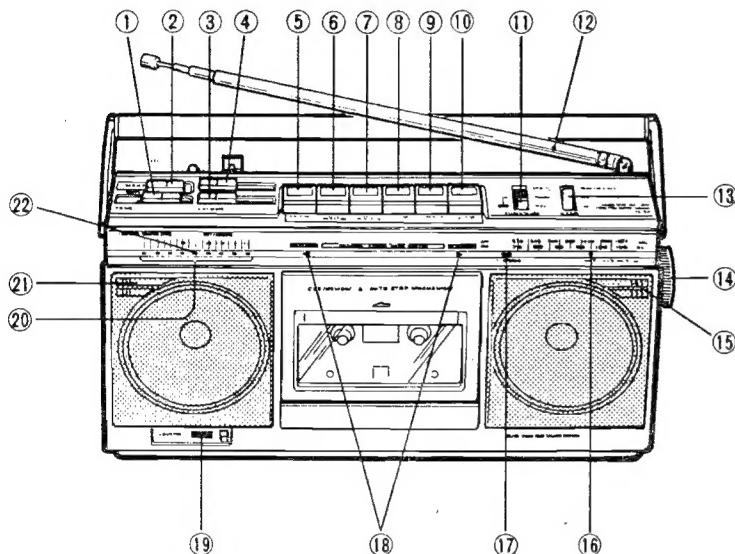


HITACHI

TRK-8430EX

SERVICE MANUAL

No. 1331



KEY TO ILLUSTRATIONS

- ① TONE CONTROL
- ② MODE SWITCH
- ③ VOLUME CONTROL (R)
- ④ VOLUME CONTROL (L)
- ⑤ PAUSE BUTTON
- ⑥ FAST FORWARD/CUE BUTTON
- ⑦ REWIND/REVIEW BUTTON
- ⑧ PLAYBACK BUTTON
- ⑨ RECORD BUTTON
- ⑩ STOP/EJECT BUTTON
- ⑪ FUNCTION SELECTOR
- ⑫ TELESCOPIC ANTENNA (AERIAL)
- ⑬ BAND SELECTOR
- ⑭ TUNING CONTROL
- ⑮ BUILT-IN MICROPHONE (R)
- ⑯ FREQUENCY INDICATOR
- ⑰ FM STEREO INDICATOR
- ⑱ STEREO WIDE INDICATOR
- ⑲ TAPE COUNTER
- ㉐ LEVEL INDICATORS
- ㉑ BUILT-IN MICROPHONE (L)
- ㉒ BATT/OPERATION INDICATOR

SPECIFICATIONS

GENERAL SECTION

Semi-conductors :	IC's : 8 Transistors : 14 Diodes : 8 LED's : 13
Power (Mains) Supply :	AC : 100 to 110V, 115 to 127V, 200 to 220V, 230 to 250V 50/60 Hz (Using AC adapter) DC : 9V (IEC R6×6 or equivalent)
Power (Mains) Consumption :	13W
Power output :	2.0W/Ch (T.H.D. 10%)
Speaker :	77mm 4 Ohms×2
Dimensions :	300(W)×144(H)×60(D)mm
Weight :	2.0kg (with batteries)

TUNER SECTION

Circuit System :	FM/MW 2-band superheterodyne
Tuning Range :	FM : 76 to 108 MHz MW : 530 to 1605 kHz
Sensitivity :	FM : 10 dB (pra.) 2 dB (max.) MW : 45 dB (pra.) 30 dB (max.)
Intermediate Frequency :	FM : 10.7 MHz MW : 455 kHz
Antennas (Aerials) :	FM : Telescopic antenna (aerial) MW : Built-in ferrite-core antenna (aerial)

TAPE RECORDER

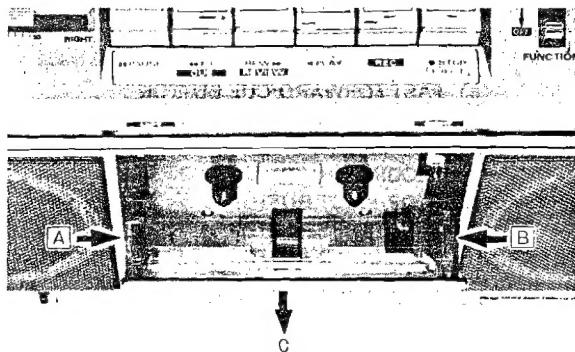
Tape :	Cassette tape (C-30, 60, 90)
Tape Speed :	4.75cm/s
Recording System and Bias Frequency :	AC bias, 29 kHz
Erasing System :	Quasi-AC erase
Track System :	4 track 2 Channel.
Frequency Response :	80 Hz to 10 kHz
S/N (Signal to Noise Ratio) :	40 dB
Cross Talk :	65 dB (Bet. Track) 35 dB (Bet. Channel)
Erase Ratio :	-60 dB
Input Sensitivity and Impedance :	Microphone : -55 dB, 500 ohms LINE IN : 500mV, 50K ohms
Output Lev and Impedance :	LINE OUT : 500mV, 5.6K ohms Headphone : 56 ohms Ext. speaker : 4 ohms
Fast Forward or Rewinding Time :	135 sec. (Using C-60)
Distortion :	2%
Motor :	DC motor

CASSETTE TAPE RECORDER WITH FM/MW RADIO

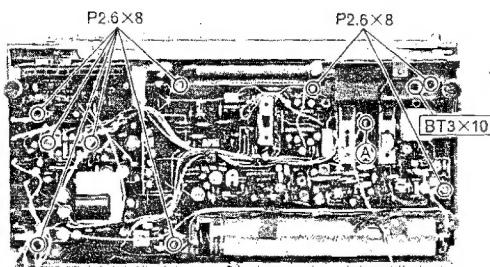
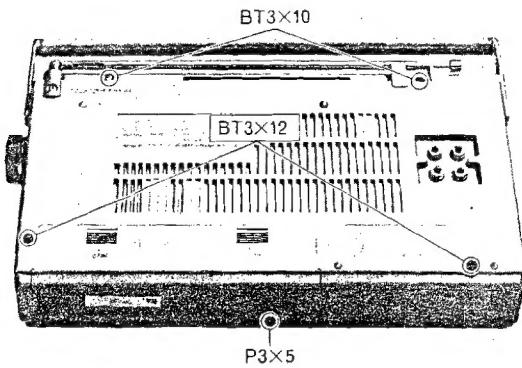
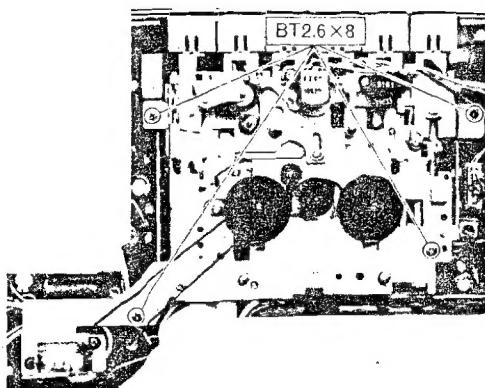
SAFETY PRECAUTION

The following precautions should be observed when servicing.

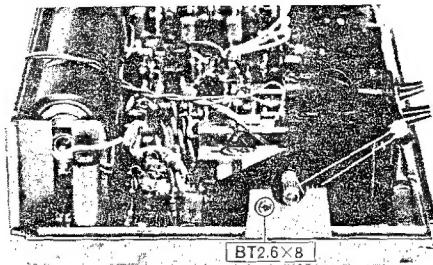
1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes. Critical parts are marked with Δ in the schematic diagram, and circuit board diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

DISASSEMBLY**1. Cassette Lid****4. Main P.C. Board**

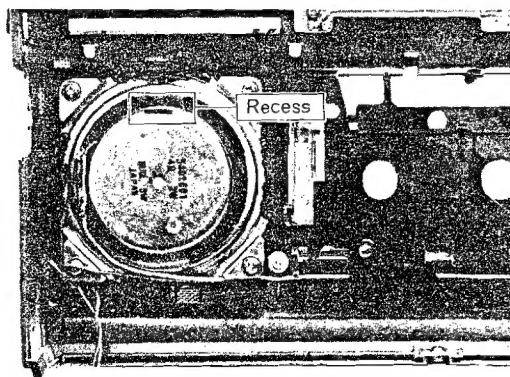
4-1

**2. Front Case****3. Cassette Chassis**

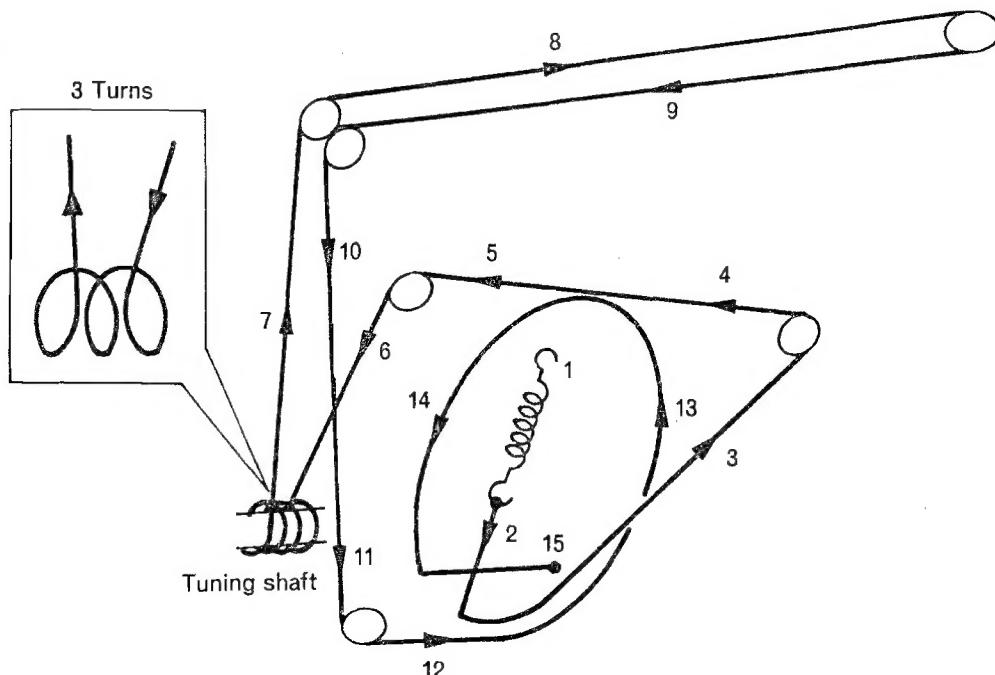
4-2

**5. Cautions on installing the speakers**

Install the left side speaker with the recess set to the top (because the speaker and band select switch will be in contact) viewed from the inside of the set.



DIAL CORD STRINGING



STRINGING METHOD

- 1) Turn the dial pulley fully counterclockwise.
- 2) Apply the string in the order of numbers. (Nos. 1—15)
- 3) Set the pointer (frequency indicator LED) to minimum tuning frequency position.

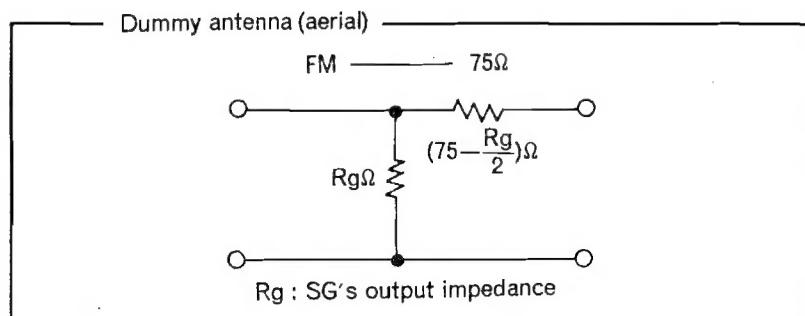
LUBRICATION

Lubricate one or two drops of machine oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed below once every 1000 hours or once a year under normal conditions of use. Avoid oiling then excessively, or rotation may become irregular because of oil splashes.

LUBRICATION POINT	OIL OR GREASE
Motor shaft bearing	Oil
Capstan shaft bearing	Oil
Pressure roller bearing	Oil

ADJUSTMENT

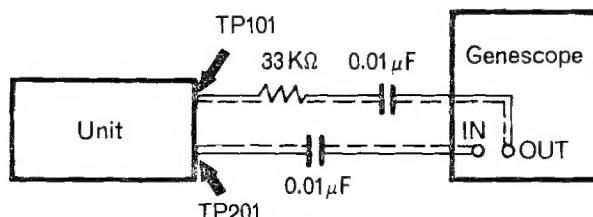
TUNER SECTION

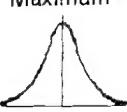
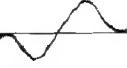


1. FM IF adjustment**Setting :**

- Function selector : RADIO
- Mode switch : MONO

- Band selector : FM

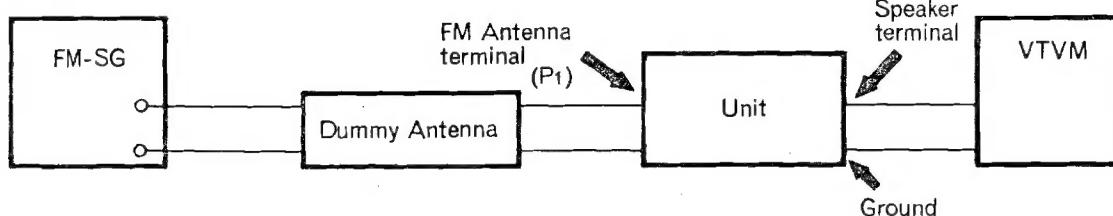
Connection :**Adjustment :**

Genescope	Dial pointer position	Adjust	Reading	Remarks
10.7 MHz	Highest	T204	—	Turn T204 fully counterclockwise.
		T201	Maximum 	1) fc : Specified center frequency of the ceramic filter. 2) Reduce the level of the genescope to make one waveform.
		T204		Adjust T204 for a symmetrical sinewave (S curve) output.

2. FM RF (Covering & Tracking) adjustment**Setting :**

- Function selector : RADIO
- Mode switch : MONO

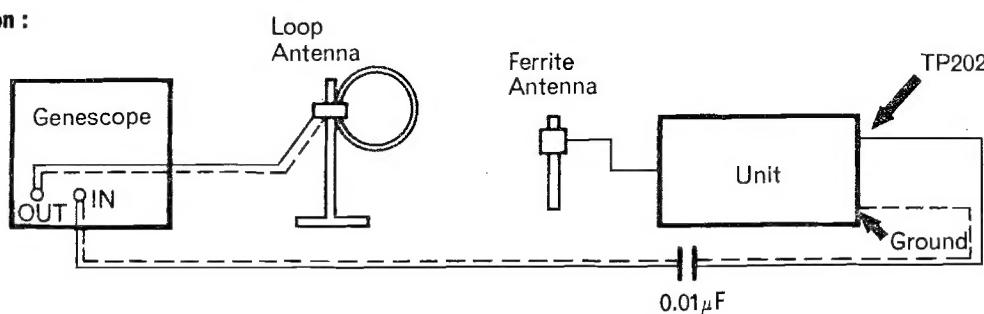
- Band selector : FM

Connection :**Adjustment :**

Item	Signal generator		Dial pointer position	Adjust	Reading	Remarks
	Frequency	Modulation				
1	Covering	75 MHz	400 Hz 30%	Lowest	L102	Max.
2		109 MHz		Highest	CT102	
3	Repeat 1 and 2.					
4	Tracking	78 MHz	400 Hz 30%	78 MHz	L101	Max.
5		106 MHz		106 MHz	CT101	
6	Repeat 4 and 5.					

3. AM IF adjustment**Setting :**

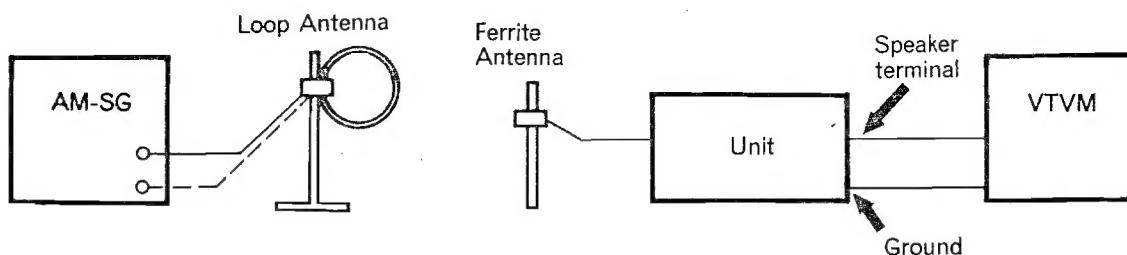
- Function selector : RADIO
- Band selector : AM

Connection :

Genescope		Dial pointer position	Adjust	Reading	Remarks
Frequency	Modulation				
455 kHz	—	Highest	T202 T203	Max.	—

4. AM RF (Covering & Tracking) adjustment**Setting :**

- Function selector : RADIO
- Band selector : AM

Connection :**Adjustment :**

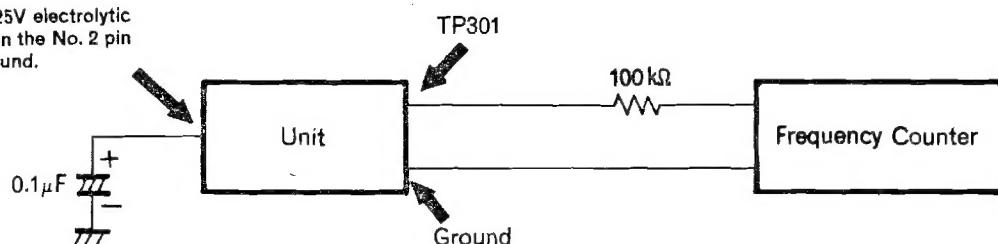
Item	Signal generator		Dial pointer position	Adjust	Reading	Remarks
	Frequency	Modulation				
1	Covering	515 kHz	400 Hz 30%	Lowest	L105	Max.
2		1,650 kHz		Highest	CT104	
3	Repeat 1 and 2.					
4	Tracking	600 kHz	400 Hz 30%	600 kHz	L104	Max.
5		1400 kHz		1400 kHz	CT103	
6	Repeat 4 and 5.					

5. FM MPX (Multiplex) adjustment**Setting :**

- Function selector : RADIO
- Band selector : FM
- Mode switch : STEREO

Connection :

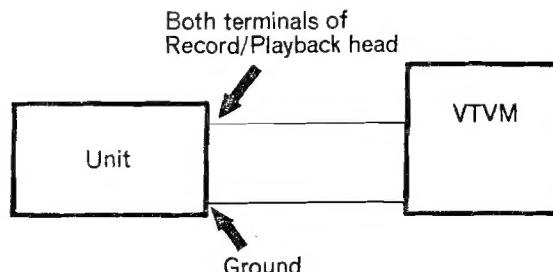
Connect a $10\mu\text{F}$ 25V electrolytic capacitor between the No. 2 pin of IC301 and ground.

**Adjustment :**

Adjust	Reading	Remarks
RT301	$19 \text{ kHz} \pm 100 \text{ Hz}$	—

TAPE DECK SECTION**1. Bias current adjustment**

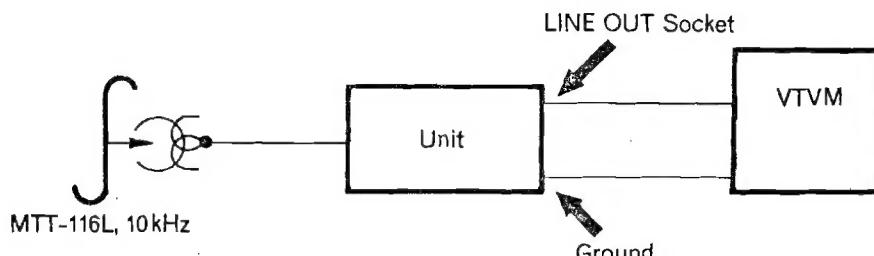
Setting : Recording mode

Connection :

Adjustment : Set the record mode. Adjust RT460 so that the bias voltage of 8V is applied to the both terminals of Record/Playback head.

2. Head azimuth adjustment

Setting : Playback mode

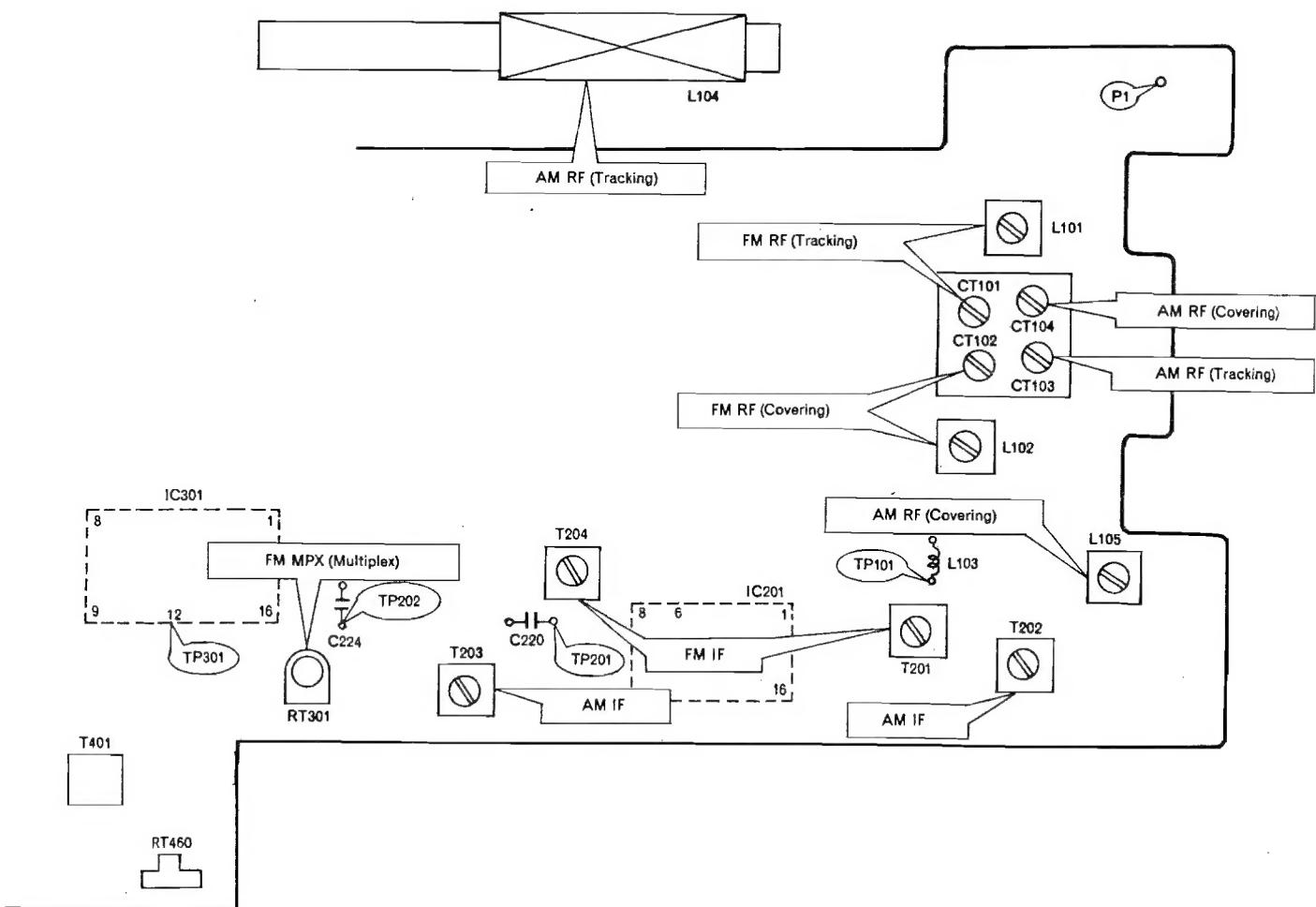
Connection :

Adjustment : Playback a test tape (MTT-116L, 10 kHz) and adjust the azimuth adjustment screw for maximum output.

3. Inspection of mechanism

Mode	Item	Pressure or Torque
Playback	Pressure of pressure roller	350~420gr
	Take-up torque	35~55gr-cm
	Take-up reel back tension	5gr-cm or less
	Supply reel back tension	1.5~2.5gr-cm
Rewind	Rewind torque	70gr-cm or more
Fast Forward	Fast Forward torque	70gr-cm or more

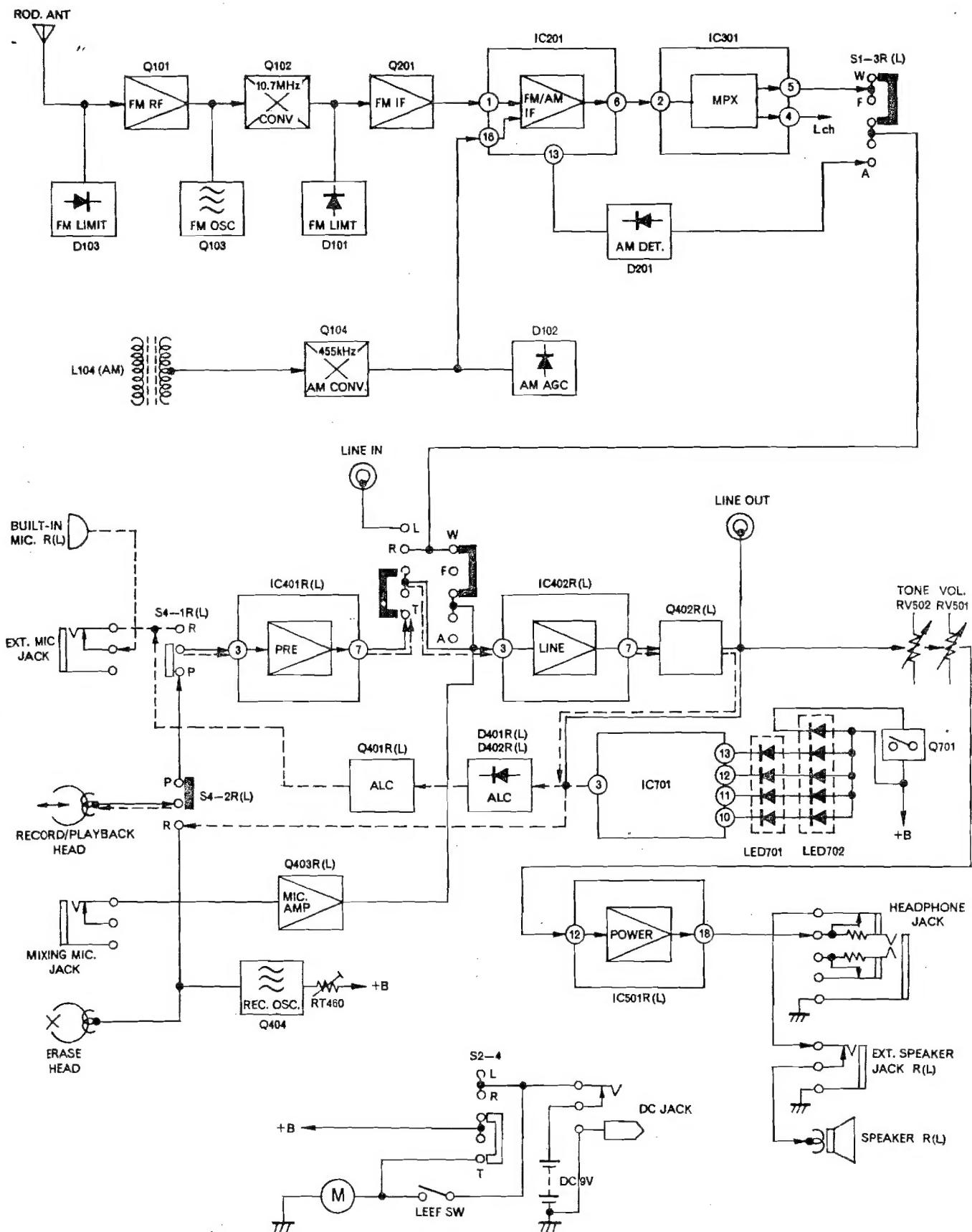
ADJUSTMENT PARTS LOCATION



EX

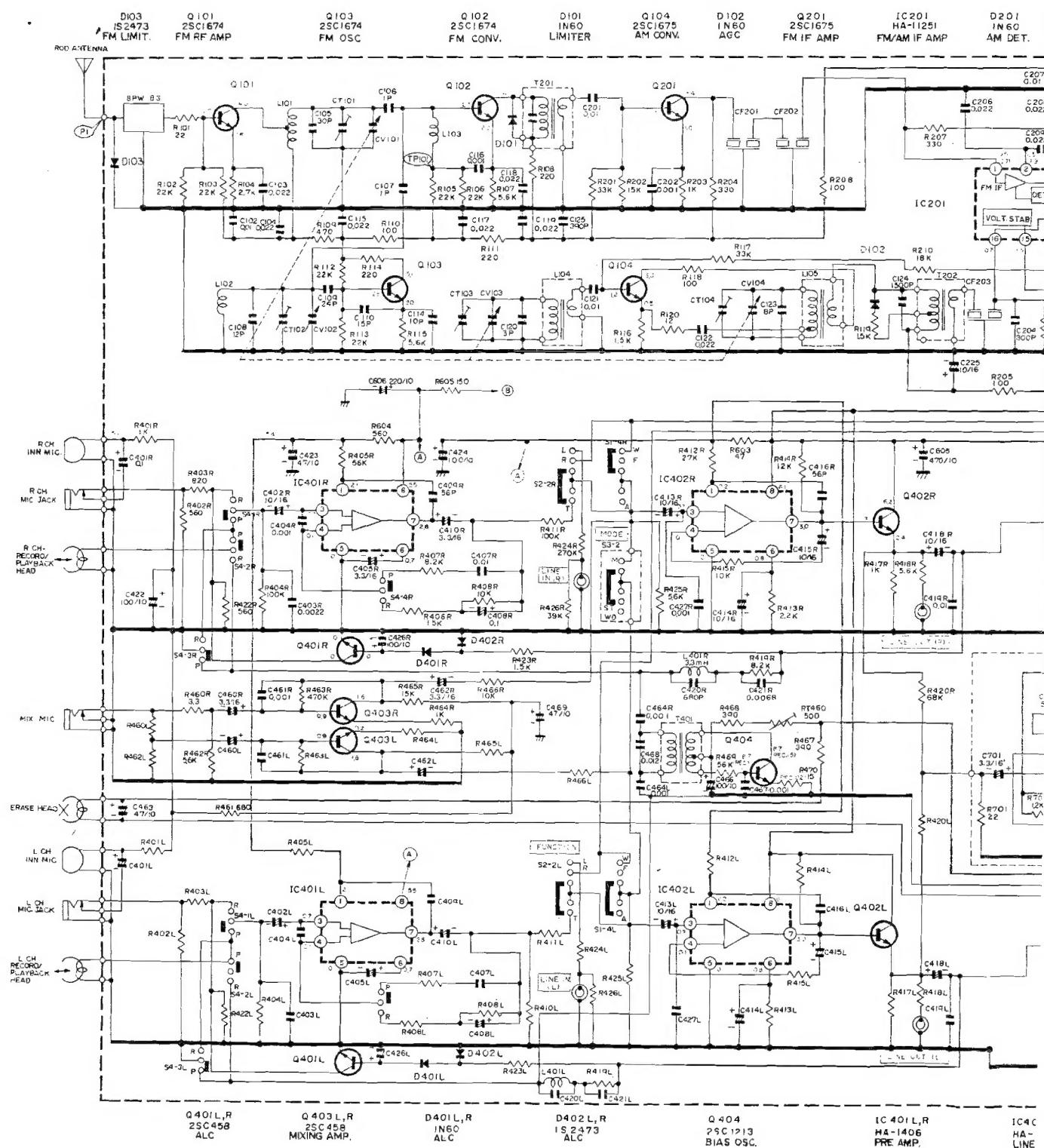
TRK-8430EX

BLOCK DIAGRAM



SCHEMATIC DIAGRAM

3.



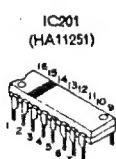
Q101,103
(2SC1674L)
Q104,201
(2SC1675L)
Q401,402,403R(L),701
(ZSC458C)



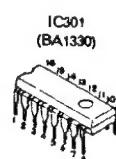
Q404
(2SC1213C)



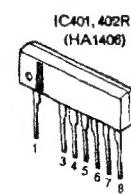
Q601
(2SC1368C)



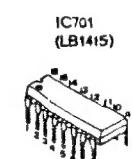
IC201
(HA-1125I)



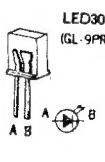
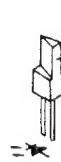
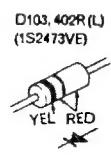
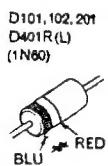
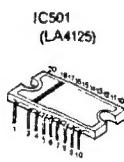
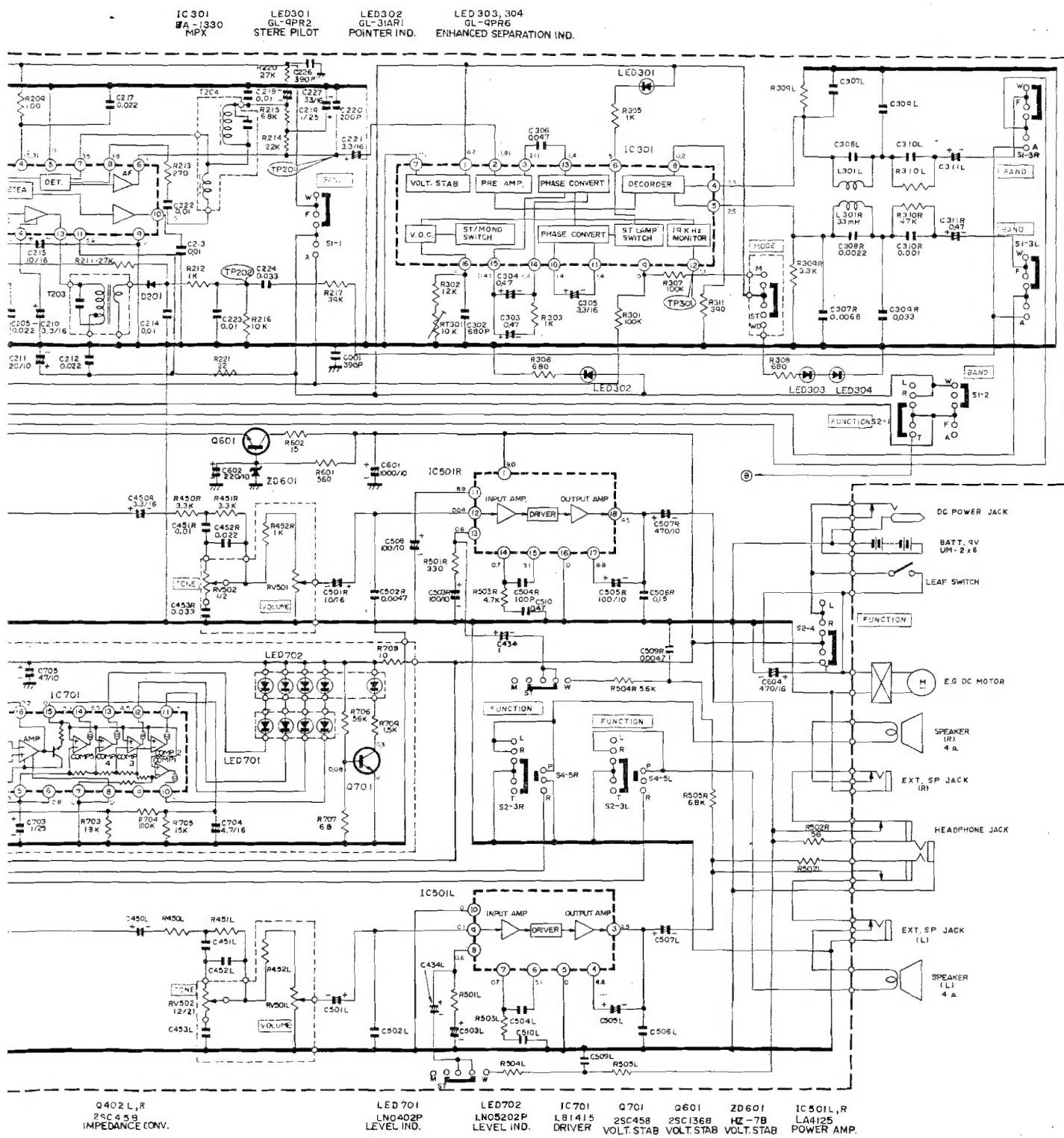
IC301
(BA1330)



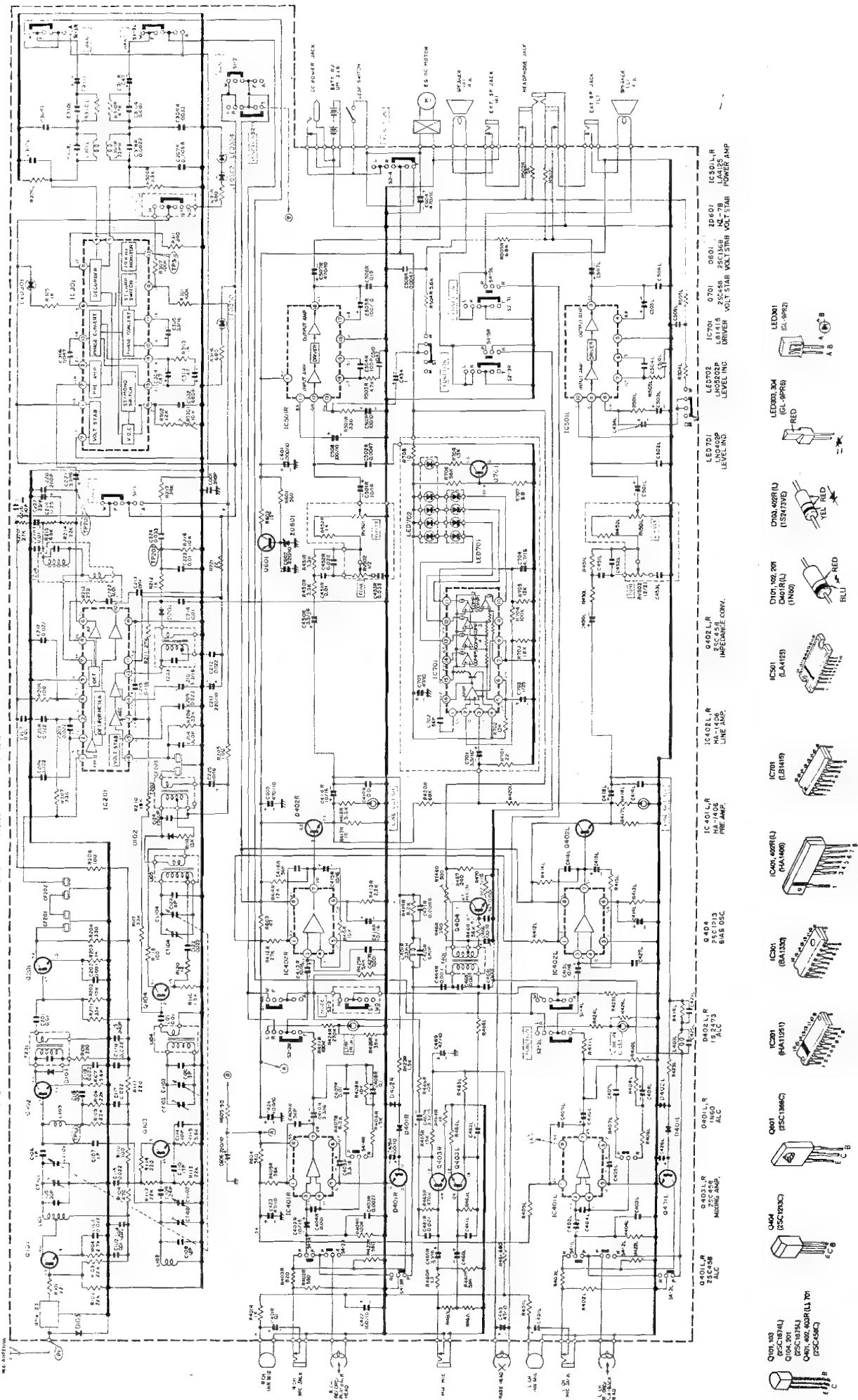
IC401, 402R(L)
(HA1406)



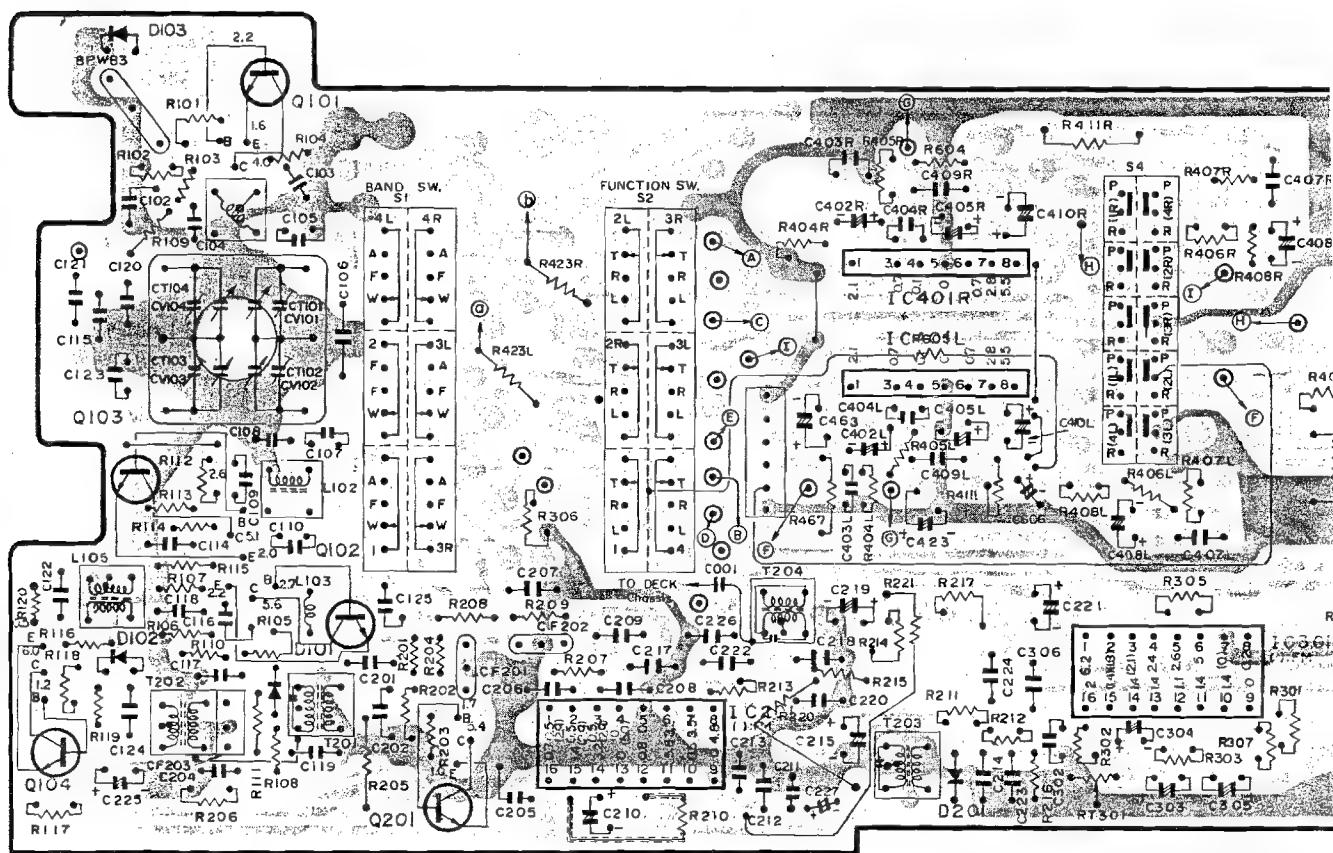
IC701
(LB1415)



SCHEMATIC DIAGRAM



CIRCUIT BOARD DIAGRAM

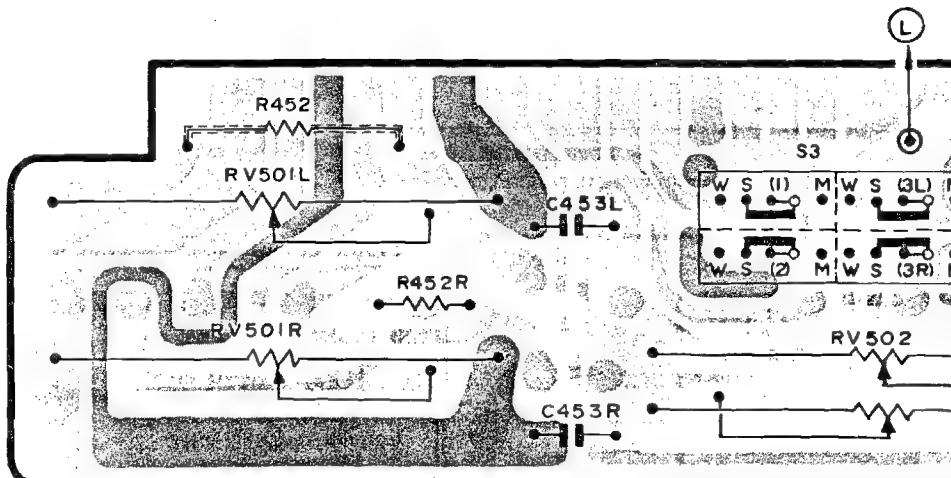


Note

1. Voltage measured at base of chassis with minimum volume control and no signal.
 2. Nonadjustment of Resistors and Capacitors

2. Nomenclature of Resistors and Capacitors.		Circuit No.
R101	150	Value No indicated Ω (Ohm) M : 1000k Ω
RS-1-KJ		Tolerance No indicated $\pm 5\%$ K : $\pm 10\%$ M : $\pm 20\%$
		Wattage No indicated $1/4W$
		Sort No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film CN : Ceramic film

VOLUME P.C BOARD



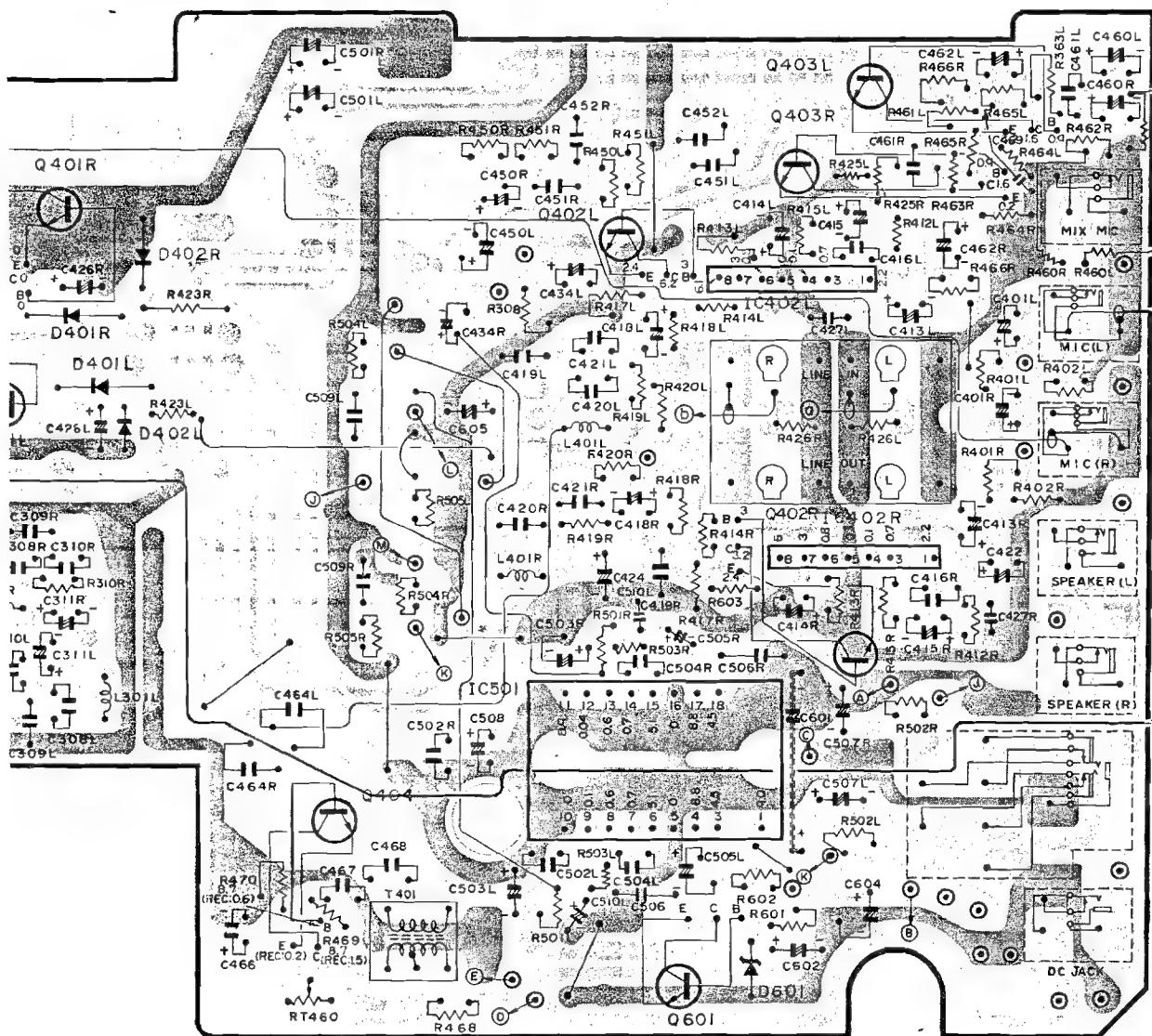
3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
 4. When replacing capacitors marked with *, use specified ones stated on parts list since required temperature characteristics.

: Component side pattern,

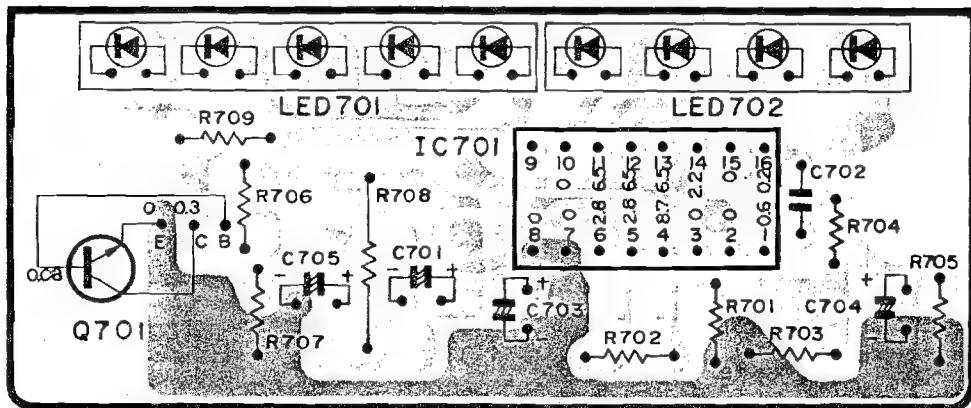
: Ground,

: Signal, +B

IN PC BOARD



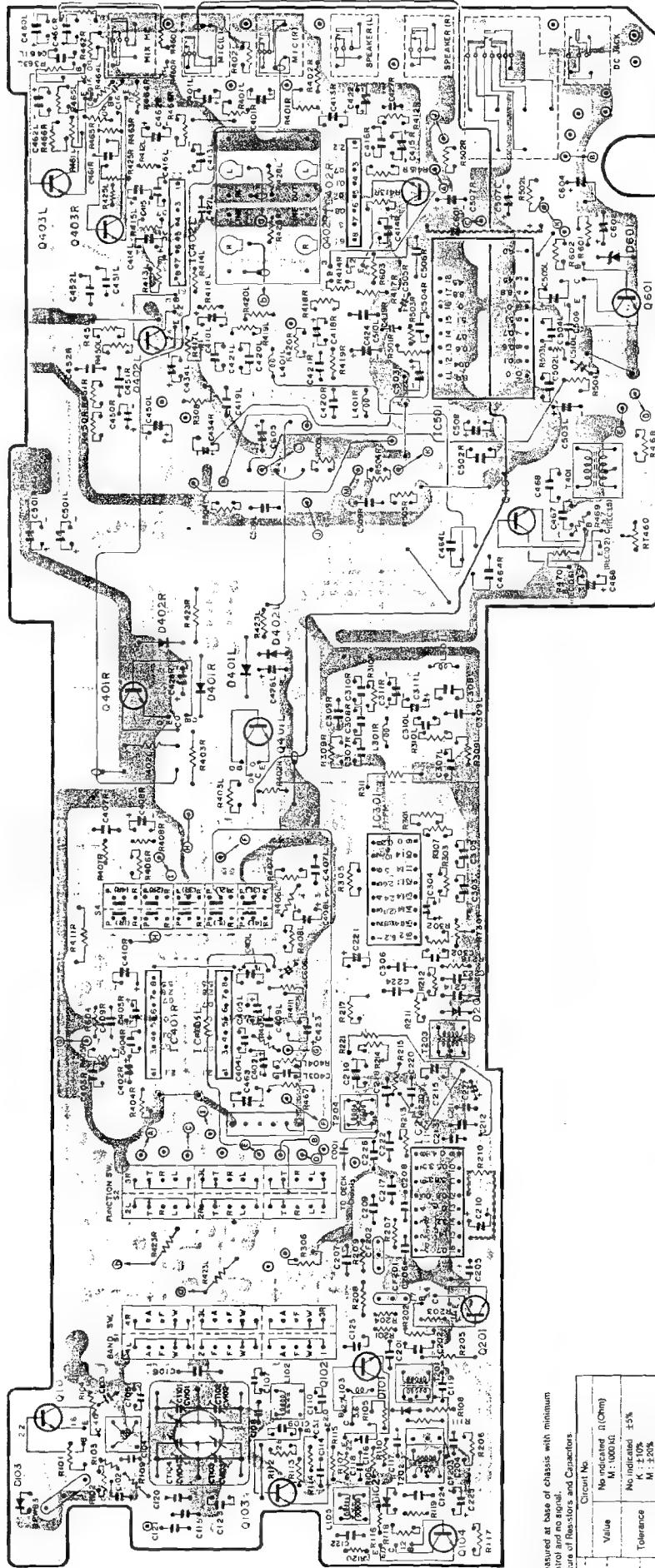
LEVEL INDICATOR P.C BOARD



CIRCUIT BOARD DIAGRAM

: Component side pattern

MAIN PC BOARD

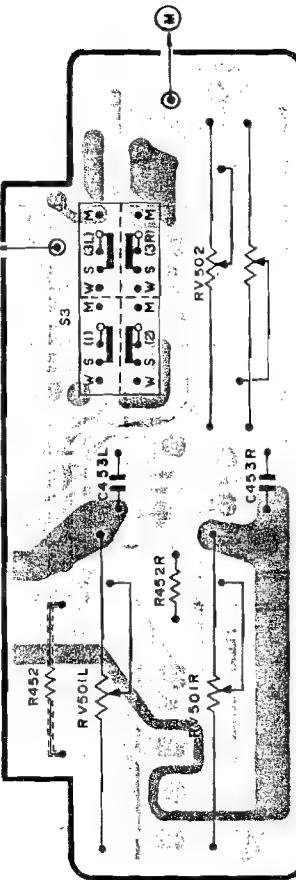


Note

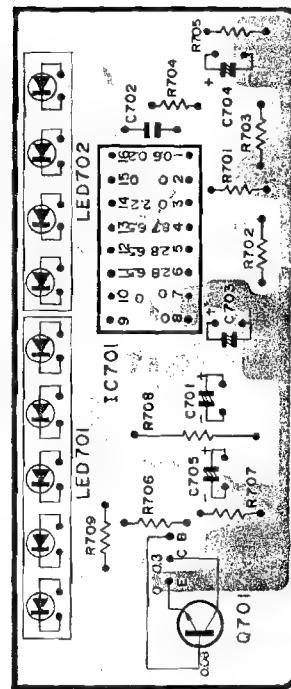
1. Voltage measured at base of chassis with minimum volume control and no signal.

2. Nomenclature of Resistors and Capacitors			
Circuit Name	Value	No indicated R (Ωm)	No indicated R (Ωm)
R11	M	M ± 1000 kΩ	M ± 10%
R40	K	K ± 10%	K ± 10%
RS ₄₀	Ω	Ω	Ω
		Tolerance	Wattage
			No indicated kW
			No indicated Carbon Film
			Commercial
			RCW
			Wire Bond
			Surface Mount

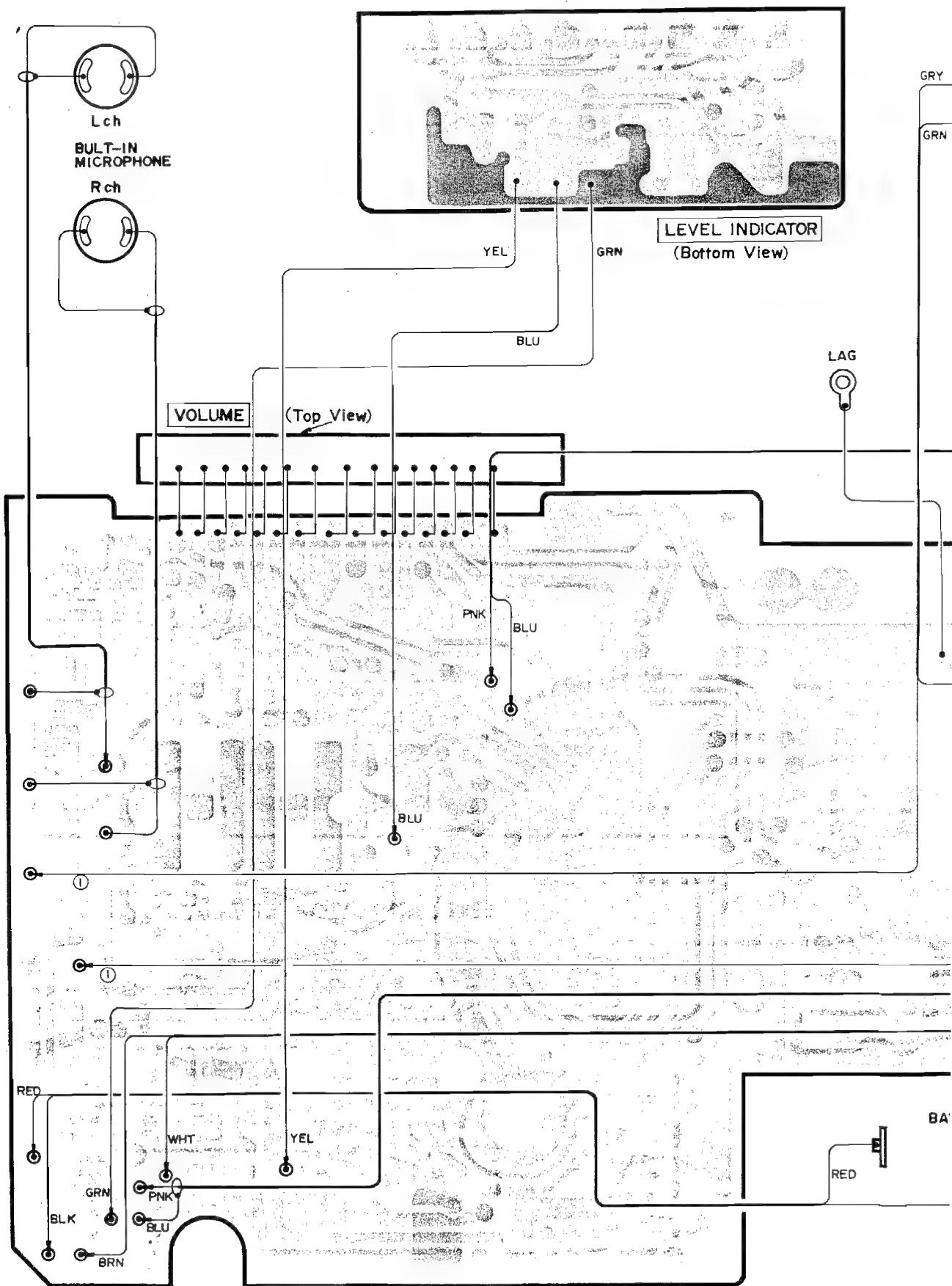
VOLUME P.C BOARD



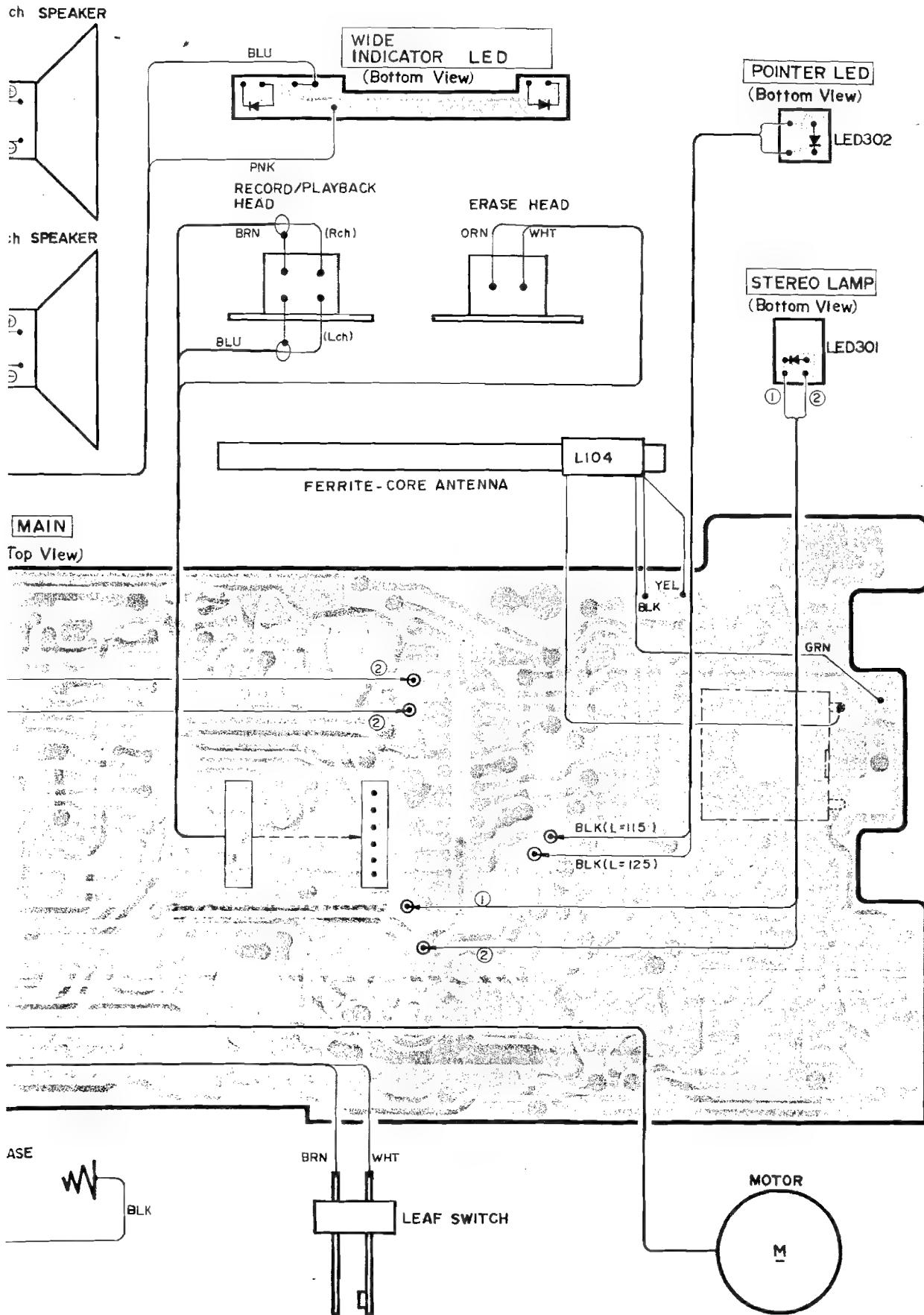
I EVEL INDICATION BOARD



WIRING DIAGRAM

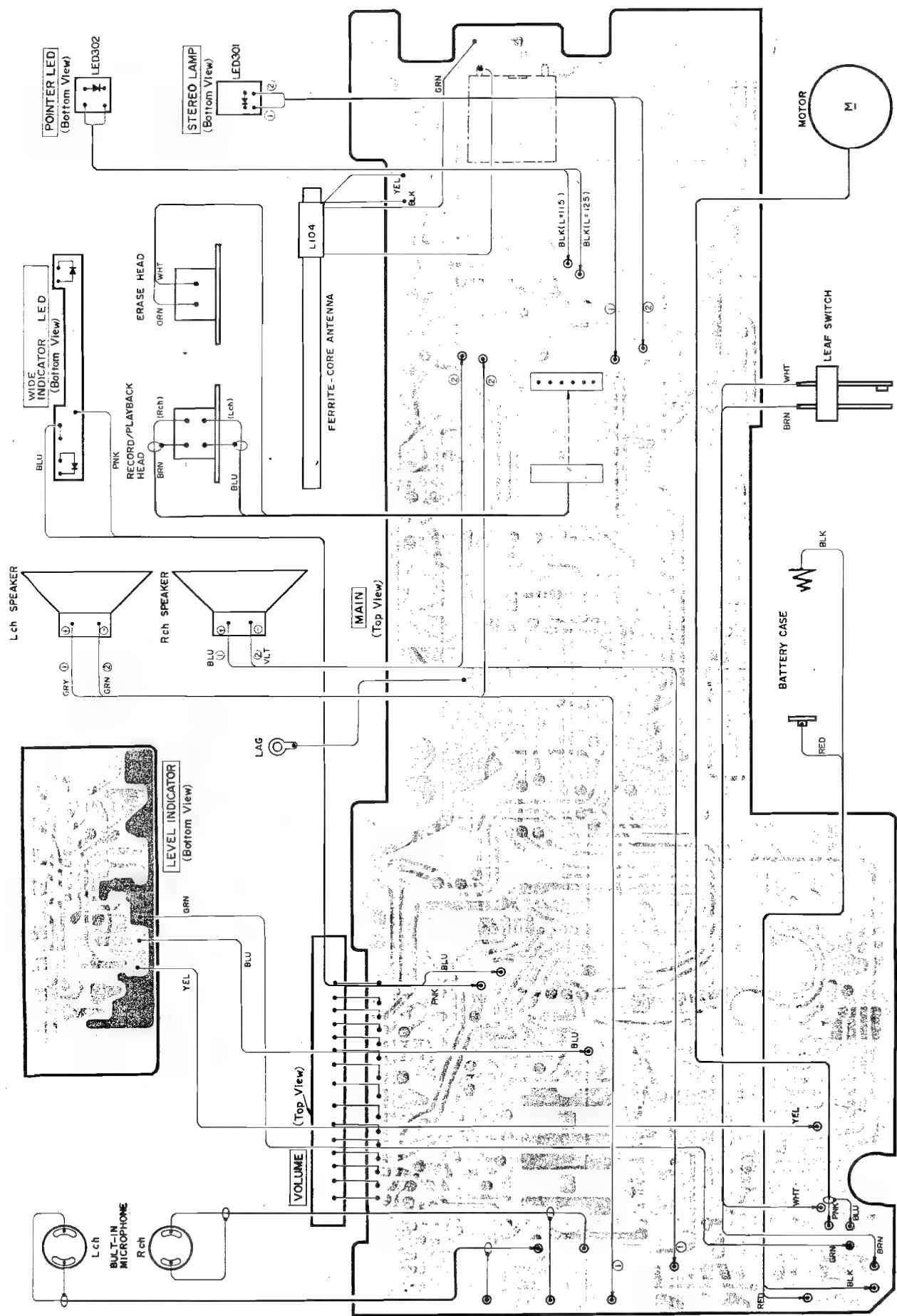


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TRK-8430EX TRK-8430EX

WIRING DIAGRAM



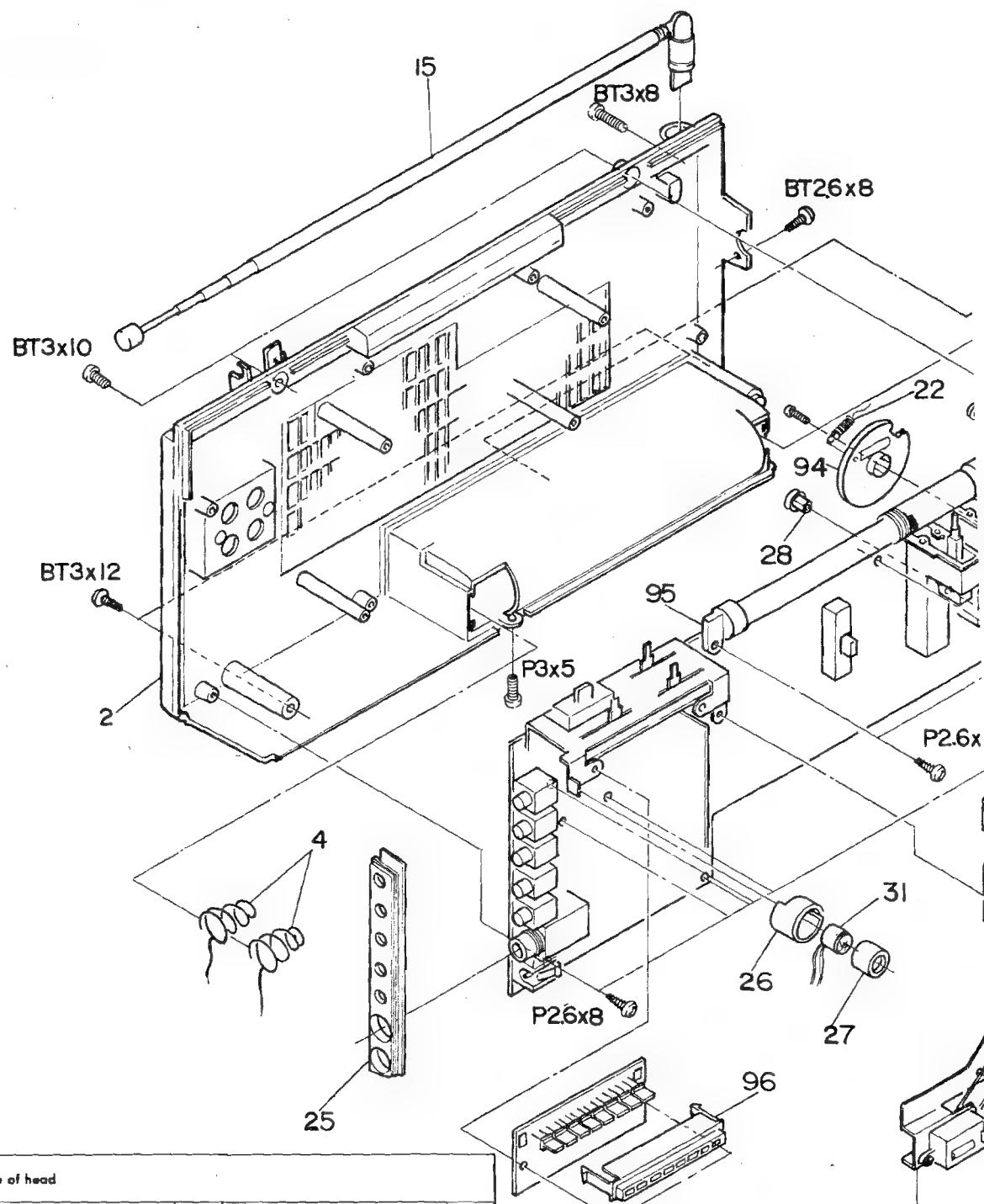
REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION			
CAPACITORS								
CT101-104	5052461	PLASTIC FILM VARIABLE CAPACITOR	L104	5110481	FERRITE CORE ANTENNA			
CV101-104	5052461	PLASTIC FILM VARIABLE CAPACITOR	L105	5120721	AM OSCILLATOR COIL			
RESISTORS								
RT391	0151872	SEMI VARIABLE 10KOHM	L301LR	5150571	CHOKE COIL 33MH			
RT460	0151868	SEMI VARIABLE 500 OHM	L401LR	5150571	CHOKE COIL 33MH			
RV501LR	5026041	VARIABLE 10KOHM(A)	MISCELLANEOUS					
RV502	5026042	VARIABLE 10K OHM(A)	5670466	JACK				
SEMI-CUNDUCTORS			5671262	DC JACK				
D101	0575005	DIODE 80M	5674241	HEADPHONE JACK				
D102	0575005	DIODE 80M	5676281	US PIN JACK				
D103	5330572	DIODE 100M	BP101	5162001	BAND PASS FILTER			
D201	0575005	DIODE 80M	CF201	5160301	CERAMIC FILTER 10.7MHZ			
D401LR	0575005	DIODE 80M	CF202	5160301	CERAMIC FILTER 10.7MHZ			
D402LR	5330572	DIODE 100M	CF203	5160111	CERMIC FILTER			
IC201	5351411	IC HA11251	S1,2	5604461	LEVER SWITCH (FUNCTION, BAND)			
IC301	5350684	IC HA1330	S3	5620082	SLIDE SWITCH (MODE)			
IC401LR	5350251	IC HA1406	S4	5620901	SLIDE SWITCH (REC./P.B.)			
IC402LR	5350251	IC HA1406	FUR ACCESSARIES					
IC501	5352321	IC LA4125	△	5593131	PRERECORED TAPE (C-15)			
IC701	5352351	IC LB1415		7083881	AC ADAPTOR(AW-910)			
LED701	5380461	LED LN04202P	MISCELLANEOUS					
LED702	5380462	LED LN05202P	1	6034692	FRONT CASE ASSEMBLY			
Q101-103	5321271	TRANSISTOR SILICON 2SC1674L 600MHZ	2	6034682	REAR CASE ASSEMBLY			
Q104	5321281	TRANSISTDR SILICON 2SC1675-L 230MHZ 200M	3	7776042	TERMINAL			
Q201	5321281	TRANSISTOR SILICON 2SC1675-L 230MHZ 200M	4	6303281	SPRING			
Q401LF	5320023	TRANSISTOR SILICON 2SC458LGC	5	6334231	HANDLE			
Q402LR	5320023	TRANSISTUR SILICON 2SC458LGC	6	5402601	SPEAKER-7.7CM			
Q403LR	5320023	TRANSISTOR SILICON 2SC458LGC	7	5380411	LED GL-9R6			
Q404	5320623	TRANSISTOR SILICON 2SC1213A-C 80MHZ 400M	8	5380271	LED GL-4PR2			
Q601	5322539	TRANSISTOR 2SC156A	9	6092741	CASSETTE LID ASSEMBLY			
Q701	5320023	TRANSISTOR SILICON 2SC458LGC	10	6055301	BUTTON			
ZD601	2330632	ZENNER DIODE K27B	11	6055302	BUTTON (REC)			
TRANSFURMERS			12	6055303	BUTTON(PLAY)			
T101	5140161	FM IF TRANSFORMER	13	6533401	SPRING			
T201	5140171	FM IF TRANSFORMER	14	7745621	SPACER			
T202	5130281	AM IF TRANSFORMER	15	5752541	ROD ANTENNA			
T203	5130282	AM IF TRANSFORMER	16	6055251	KNOB (TUNING)			
T401	5260411	BIAS OSCILLATOR COIL	17	6055241	KNOB (BAND+FUNCTION)			
COILS			18	6055221	KNOB (VOLUM,TONE)			
L101	5127021	FM RF COIL	19	6055231	KNOB (MODE)			
L102	5127031	FM OSCILLATOR COIL	20	6173931	BATTERY LID			
L103	5127051	FM CHOKE COIL	21	6759761	CHASSIS			
			22	6541171	SPRING			
			23	6398611	PIINTER			
			24	5380041	LED GL-31AR			
			25	6759771	JACK PLATE			
			26	6758121	MIC HOLDER			
			27	6570271	MIC HANGER			
			28	7547921	ROLLER SHAFT			
			29	7755301	SHHEET			

TRK-8430EX

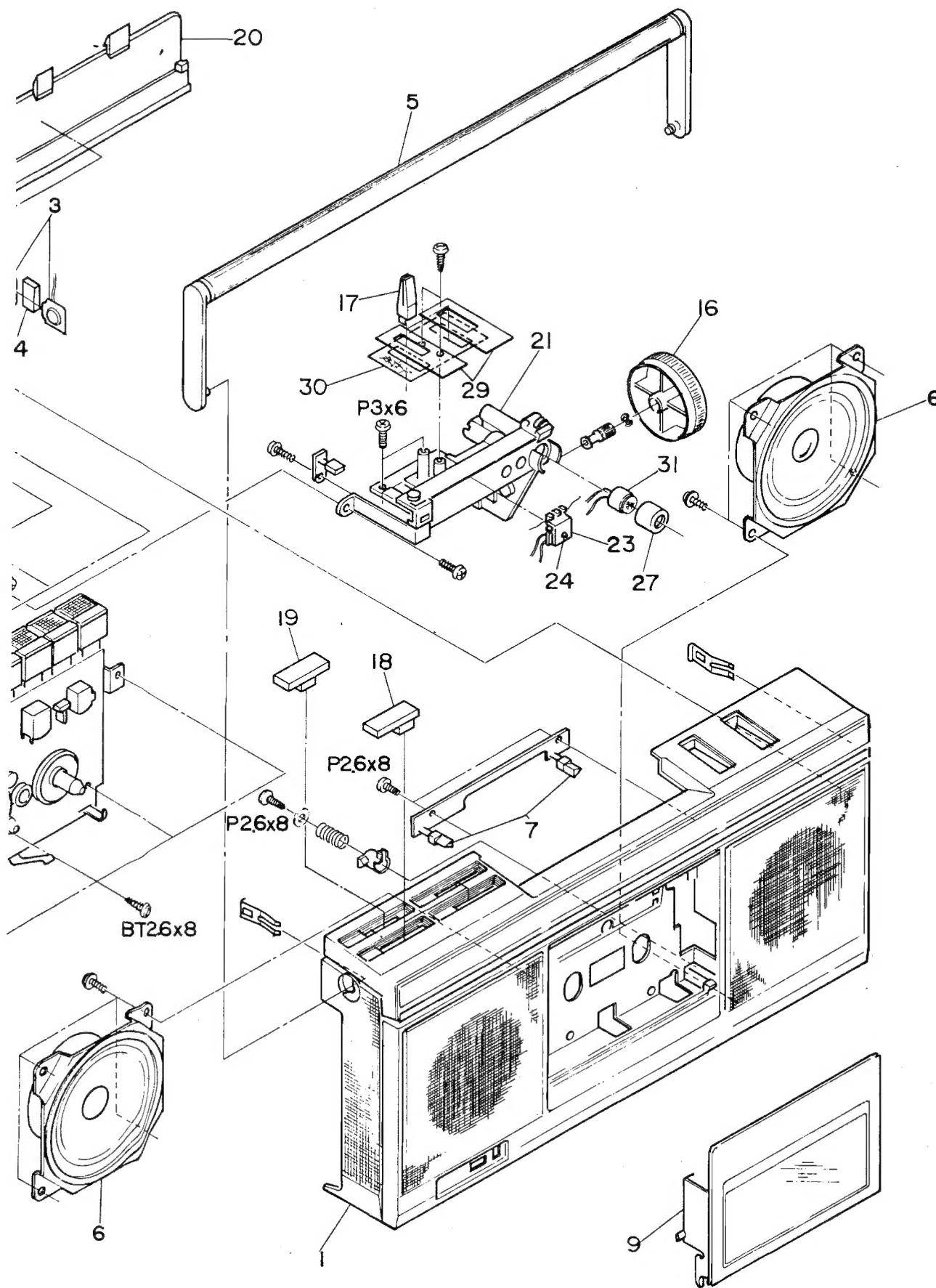
DL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
MISCELLANEOUS					
30	7755291	SHEET PLATE	63	7546641	CASSETTE UP METAL
31	5421611	BUILT IN MICROPHONE	64	6545481	SPRING
32	7317281	HEAD PLATE	65	7313961	SWITCH FUNCTION LEVER
33	6365491	PRESSURE ROLLER ARM ASSEMBLY	66	6540331	SPRING
34	6545451	SPRING	67	7317311	LOCK LEVER ASSEMBLY
35	6305281	SPRING	68	6305291	SPRING
36	7317291	PAUSE LEVER	69	7313991	LOCK LEVER HOLDER
37	6540281	SPRING	70	6413401	TURNTABLE ASSEMBLY
38	7313891	PAUSE LOCK PLATE	71	6305301	BACK TENSION SPRING
39	6545441	SPRING	72	6413861	CLUTCH ASSEMBLY
40	7314091	FF SLIDER	73	6540341	SPRING
41	6540291	SPRING	74	6382041	RF IDLER
42	6540251	SPRING	75	6540261	SPRING
43	6381841	FF IDLER	76	6373381	FLYWHEEL
44	7314021	PREVIEW LEVER	77	6305311	SPRING
45	6532541	LEAF SPRING	78	7664042	MOTOR CUSHION
46	7314101	REWIND SLIDER	79	7781861	SCREW
47	6540321	SPRING	80	5576591	DC MOTOR
48	7314111	PLAY SLIDER	81	6354892	BELT
49	6540271	SPRING	82	5559221	COUNTER
50	6540241	SPRING	83	6354863	BELT(COUNTER)
51	7313911	RECORDING LEVER	84	5603351	LEAF SWITCH
52	6540301	SPRING	85	6532561	LEAF SPRING
53	7313901	LEVER	86	7787301	WASHER
54	7546631	METAL	87	7769391	POLYSLIDER WASHER
55	6545471	SPRING	88	6540521	SPRING
56	7313921	LEVER	89	7787311	POLYSLIDER WASHER
57	7546651	METAL	90	7787312	POLYSLIDER WASHER
58	6545461	SPRING	91	7787313	POLYESTER WASHER
59	7317301	STOP/EJECT LEVER	92	5444761	RECROD PLAYBACK HEAD
60	7313941	KICK LEVER	93	5445101	ERASE HEAD
61	6540311	SPRING	94	6428051	DIAL PULLYE
62	7313951	CASSETTE UP LEVER	95	6791211	FERRITE ANTENNA HOLDER
			96	6758131	LED HOLDER

EXPLODED VIEW



Type of head	
P	Pan head screw
F	Flat countersunk head screw
B	Binding head screw
T	Round head tapping screw
BT	Binding head tapping screw
BL	Bolt
W	Washer
E	"E" ring
Length (L mm)	
Diameter (D mm)	

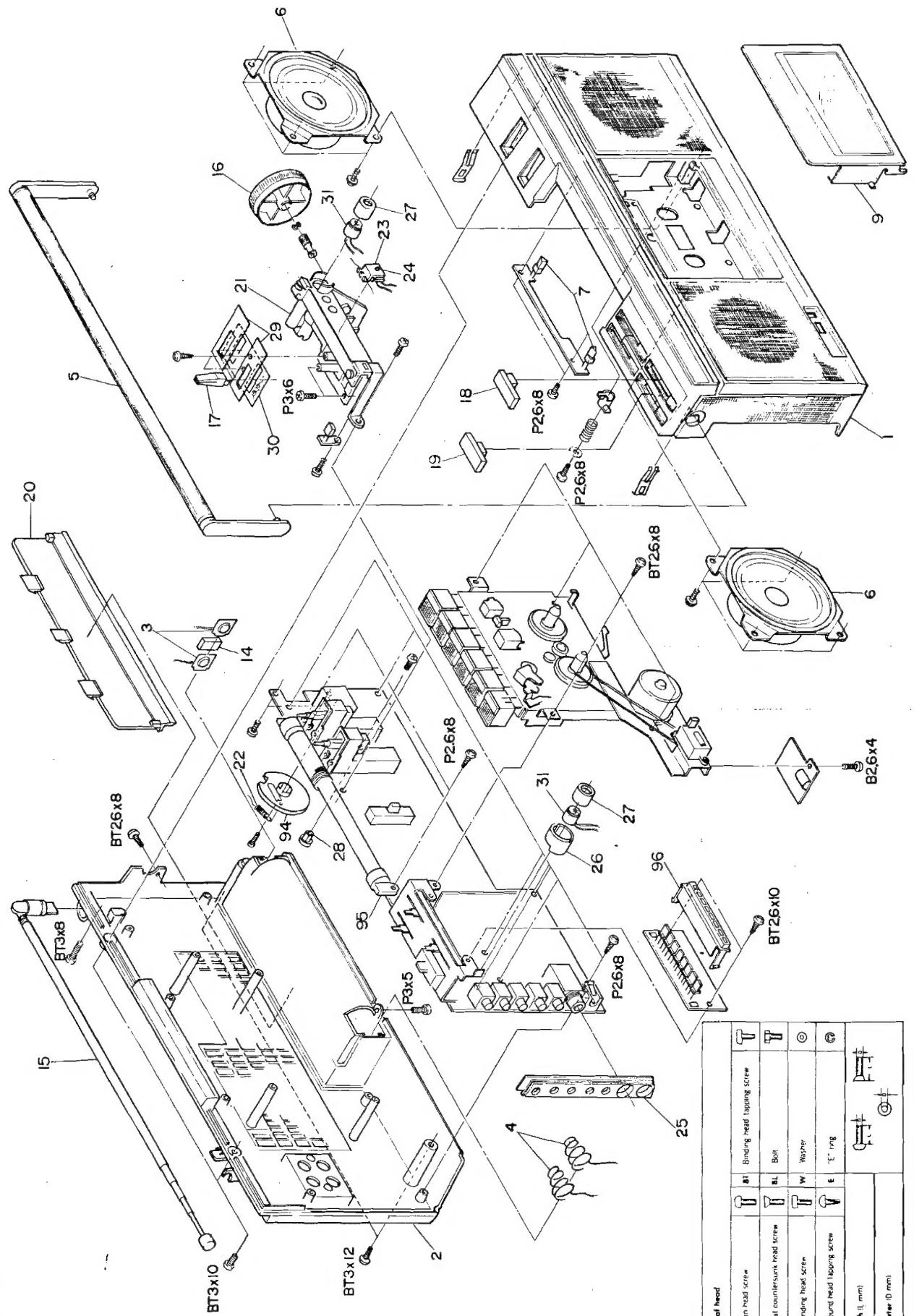
When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.



TRK-8430EX

TRK-8430EX

EXPLODED VIEW



When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.

EXPLODED VIEW

